NJM4565

The NJM4565 integrated circuit is a high-gain, wide-bandwidth, dual low noise operational amplifier capable of driving 20V peak-to-peak into 400Ω load. The NJM4565 is good characteristics compared to the NJM4560. The NJM4565 is classified to four ranks (general, A,B,D-rank) by electrical characteristics (input offset current, input bias current, equivalent input noise voltage).

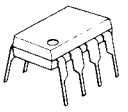
2

■ Absolute Maximum Ratings (Ta=25°C)

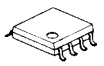
Supply Voltage	V^+/V^-	±18V
Differential Input Voltage	V_{ID}	±30V
Input Voltage (note)	V_I	±15V
Power Dissipation	P_D (D-Type)	500mW
	(M-Type)	300mW
	(L-Type)	800mW
Operating Temperature Range	T_{opr}	−20~+75°C
Storage Temperature Range	T_{stg}	−40~+125°C

(note) For supply voltage less than ±15V, the absolute maximum input voltage is equal to the supply voltage.

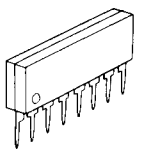
■ Package Outline



NJM4565D



NJM4565M



NJM4565L

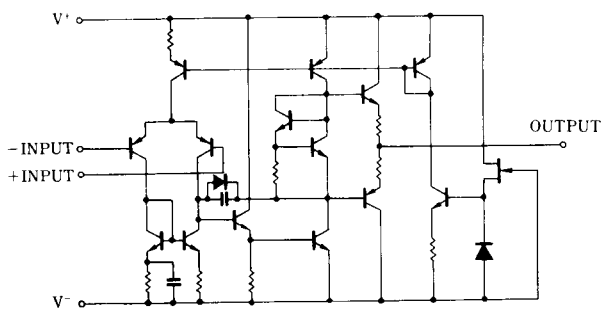
■ Recommended Operating Conditions

Supply Voltage	V^+/V^-	±4~±18V
Load Resistance	I_O	≦±25mA

■ Electrical Characteristics (Ta=25°C, V^+/V^- = ±15V)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Offset Voltage	V_{IO}	R_S≦10kΩ	—	0.5	3.0	mV
Input Offset Current	I_{IO}		—	2	50	nA
Input Bias Current	I_B		—	50	200	nA
Input Resistance	R_{IN}		0.3	5	—	MΩ
Large Signal Voltage Gain	A_V	R_L≧2kΩ, V_O=±10V	86	100	—	dB
Maximum Output Voltage 1	V_{OM1}	R_L≧2kΩ	±12	±14	—	V
Maximum Output Voltage 2	V_{OM2}	I_O=25mA	±10	±11.5	—	V
Input Common Mode Voltage Range	V_{ICM}		±12	±14	—	V
Common Mode Rejection Ratio	CMR	R_S≦10kΩ	70	90	—	dB
Supply Voltage Rejection Ratio	SVR	R_S≦10kΩ	76.5	90	—	dB
Supply Current	I_{CC}		—	4.5	7	mA
Slew Rate	SR		—	4	—	V/μs
Unity Gain Bandwidth	GB		—	10	—	MHz
Equivalent Input Noise Voltage	V_{NI}	RIAA, R_S=2.2kΩ, 30kHz LPF	—	—	—	μV

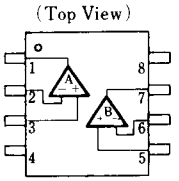
■ Equivalent Circuit (1/2 shown)



■ Connection Diagram

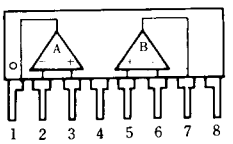
D,M-Type

(Top View)



PIN FUNCTION
1. A OUTPUT
2. A−INPUT
3. A+INPUT
4. V⁺
5. B+INPUT
6. B−INPUT
7. B OUTPUT
8. V⁻

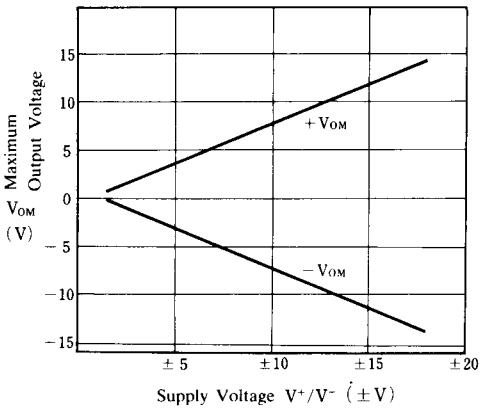
L-Type



■ **Electrical Characteristics**

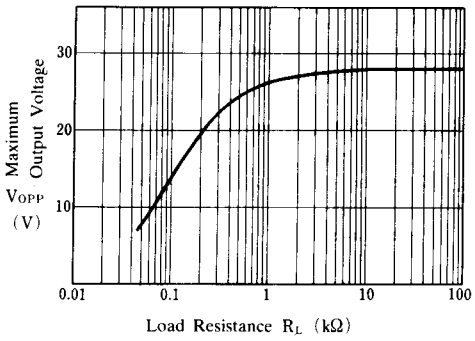
Maximum Output Voltage Swing vs. Supply Voltage

(R_L=400Ω, Ta=25°C)



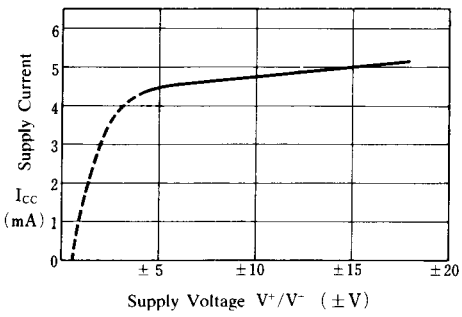
Maximum Output Voltage Swing vs. Load Resistance

(V^+/V^-=±15V, Ta=25°C)



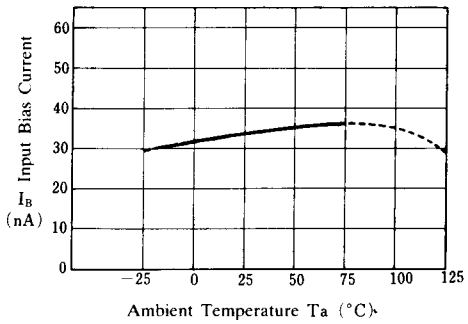
Supply Current vs. Supply Voltage

(Ta=25°C)



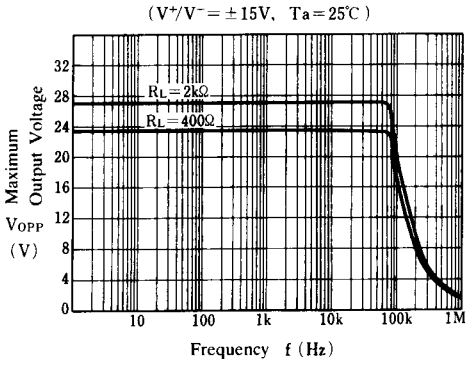
Input Bias Current vs. Temperature

(V^+/V^-=±15V)



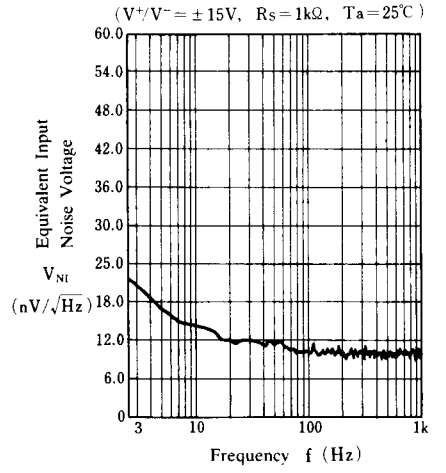
Maximum Output Voltage Swing vs. Frequency

(V^+/V^-=±15V, Ta=25°C)



Equivalent Input Noise Voltage vs. Frequency

(V^+/V^-=±15V, R_S=1kΩ, Ta=25°C)



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